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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,571	01/19/2002	Johan Engstrom	47862.256153	1747

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EXAMINER

HOLMES, MICHAEL B

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 08/26/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/683,571

Applicant(s)

ENGSTROM ET AL.

Examiner

Michael B. Holmes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:



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Examiner's Detailed Office Action

1. This action is responsive to application **09/683,571**, filed **January 19, 2002**.
2. **Claims 1-20** have been examined.

Information Disclosure Statement

3. Applicant is respectfully remind of the ongoing Duty to disclose 37 C.F.R. 1.56 all pertinent information and material pertaining to the patentability of applicant's claimed invention, by continuing to submitting in a timely manner PTO-1449, Information Disclosure Statement (IDS) with the filing of applicant's of application or thereafter.

Drawings

4. The formal drawings have been reviewed by the United States Patent & Trademark Office of Draftperson's Patent Drawings Review.

Specification

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is required in correcting any errors of which applicant may become aware in the specification. Appropriate correction is required.

Claim Interpretation

6. Office personnel are to give claims their "**broadest reasonable interpretation**" in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See *also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow. . . . The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed. . . . An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process."). *see* MPEP § 2106

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1-20** are rejected under **35 U.S.C. 102(b)** as being anticipated by

Lemelson et al. (USPN 5,983,161), Filed: Aug. 11, 1993; Date of Patent: Jan. 23, 1996.

Regarding claim 1:

Lemelson teaches,

- a method for optimizing driver-vehicle performance, comprising: collecting, on a substantially real-time basis, a plurality of driver and vehicle performance characteristic measurements [(col. 1, line 13-51 “*The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.*”); (col. 15, line 55-58 “*The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.*”)]; evaluating said plurality of driver and vehicle performance characteristic measurements to predict current driving environment [(col. 1, line 13-51 “*The invention relates generally to an apparatus and method of precisely deter-*

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mining the actual position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.”); (col. 15, line 55-58 “The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.”)]; and effecting changes in vehicle performance aspects based on said evaluation for potentiating vehicle performance. [(col. 1, line 13-51 “The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.”); (col. 15, line 55-58 “The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.”)]

Regarding claim 2:

Lemelson teaches,

collecting the driver and vehicle performance characteristic measurements further comprises collecting driving data representing a plurality of target categories. [(col. 1, line 13-51 “The invention relates generally to an apparatus and method of precisely determining the actual

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position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.”); (col. 15, line 55-58 “The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.”)]

Regarding claim 3:

Lemelson teaches,

the target categories further comprise a plurality of vehicle signals, including at least one of acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle, engine speed and brake activity. [(col. 30, line 15-24 “The Hazard/Object State Vector also serves as an index into the total FAM. ...These output signals are likewise treated as fuzzy variables with membership classes as shown in FIG. 10. Defuzzification takes place in processing block 214 of FIG. 9 as herein above described.”)]

Regarding claim 4:

Lemelson teaches,

collecting the driving data further comprises collecting driving data from different subjects driving different routes. [(col. 1, line 13-51 “The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.”); (col. 15, line

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55-58 *“The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.”*)]

Regarding claim 5:

Lemelson teaches,

collecting the driving data further comprises, annotating the driving data with the target categories by the driver during driving. [(col. 31, line 41-43 *“Thus the driver has the assistance of an on-board, real-time expert speaking to him or her and advising on the optimum driving response to a given roadway condition.”*)]

Regarding claim 6:

Lemelson teaches,

collecting the driving data further comprises collecting data from sensors for tracking at least one of eye and head movements in addition to the vehicle signals. [(col. 1, line 13-51 *“The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.”*); (col. 15, line 55-58 *“The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.”*)]

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Regarding claim 7:

Lemelson teaches,

further comprising establishing criteria for predicting driving environments differentiable between highway driving, main road driving, suburban driving and city driving. [(col. 1, line 13-

51 *"The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage."*); (col. 15, line 55-58 *"The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations."*)]

Regarding claim 8:

Lemelson teaches,

further comprising considering at least the following vehicle performance characteristic measurements in said evaluation step, said vehicle performance characteristics including: acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle, engine speed and brake activity. [(col. 30, line 15-24 *"The Hazard/Object State Vector also serves as an index into the total FAM. ...These output signals are likewise treated as fuzzy variables with membership classes as shown in FIG. 10. Defuzzification takes place in processing block 214 of FIG. 9 as herein above described."*)]

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Regarding claim 9:

Lemelson teaches,

further comprising selecting at least one vehicle performance characteristic measurement to be utilized in the evaluation from the group including: acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle, engine speed and brake activity. [(col. 11, line 32-48 “A still further feature of this aspect of the invention warning the operator of the one automobile of an expert driving response, and coordinately actuating the control systems only if a collision remains imminent. The warning step includes, for example, visually indicating the existence of a hazardous condition, such as, displaying a visually perceptible symbol on a windshield of the one automobile including the relative position and motion between the one automobile and any collision hazard. A variety of other warning modes are disclosed including speech synthesis. A still further feature of this aspect of the invention the step of includes operating one or more of the following systems depending on the kind of expert driving response determined by the fuzzy logic associative memory: a brake, acceleration, steering, horn, light, windshield wiper, seat, mirror, air conditioning, heater, defogger and communication.”)]

Regarding claim 10:

Lemelson teaches,

evaluating said plurality of driver and vehicle performance characteristic measurements further comprises extracting a plurality of features of interest from the vehicle performance characteristic measurements. [(col. 1, line 13-51 “The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of a host vehicle operating on a

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select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.”); (col. 15, line 55-58 “The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.”)]

Regarding claim 11:

Lemelson teaches,

evaluating said plurality of driver and vehicle performance characteristic measurements further comprises averaging each of the vehicle performance characteristic measurements in a pre-processing step over a predetermined time window to obtain a measure for vehicle performance characteristic during the predetermined time window. [(col. 19, line 05-07 “One way of combining such multiple positions may be by an averaging method or a majority rule method.”)]

Regarding claim 12:

Lemelson teaches,

evaluating said plurality of driver and vehicle performance characteristic measurements further comprises classifying the features of interest into categories of driving environment. [(col. 15, line 18-20 “Image scanning is used to augment the GPS location and vehicle velocity/acceleration data and to evaluate and classify road and highway hazards as described below.”)]

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Regarding claim 13:

Lemelson teaches,

evaluating said plurality of driver and vehicle performance characteristic measurements further comprises calculating a probability of a category of driving environment by a neural network based on the measure for each vehicle performance characteristic during the predetermined time window. [(col. 31, line 03-43 *"In the system of FIG. 9, a different FAM is used for each state vector of FIG. 15. Furthermore, as indicated in FIG. 12, different FAM's are used for different relative accelerations of the controlled vehicle ... real-time expert speaking to him or her and advising on the optimum driving response to a given roadway condition."*)]

Regarding claim 14:

Lemelson teaches,

the category of driving environment further comprises one of a highway driving environment, a main road driving environment, a suburban driving environment, and a city driving environment. [(col. 1, line 13-51 *"The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage."*); (col. 15, line 55-58 *"The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations."*)]

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Regarding claim 15:

Lemelson teaches,

effecting the changes in vehicle performance aspects further comprises adapting at least one of an engine and a chassis of a vehicle by a vehicle control application based on recognition of a specific driving environment. [(col. 31, line 03-43 “*In the system of FIG. 9, a different FAM is used for each state vector of FIG. 15. Furthermore, as indicated in FIG. 12, different FAM's are used for different relative accelerations of the controlled vehicle ... real-time expert speaking to him or her and advising on the optimum driving response to a given roadway condition.*”)]

Regarding claim 16:

Lemelson teaches,

effecting the changes in vehicle performance aspects further comprises effecting real real-time optimization of at least one of an engine parameter and a chassis parameter to the specific driving environment. [(col. 31, line 03-43 “*In the system of FIG. 9, a different FAM is used for each state vector of FIG. 15. Furthermore, as indicated in FIG. 12, different FAM's are used for different relative accelerations of the controlled vehicle ... real-time expert speaking to him or her and advising on the optimum driving response to a given roadway condition.*”)]

Regarding claim 17:

Lemelson teaches,

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the vehicle control application further comprises a workload manager. [(col. 22, line 44-56 “As shown in FIG. 5, the video preprocessor 102 performs necessary video image frame management and data manipulation in preparation for image analysis.”)]

Regarding claim 18:

Lemelson teaches,

- a system for optimizing driver-vehicle performance, comprising: a plurality of sensing devices for collecting, on a substantially real-time basis, a plurality of driver and vehicle performance characteristic measurements [(col. 1, line 13-51 “The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.”); (col. 15, line 55-58 “The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.”)]; a computing device coupled to the sensing devices via a controller area network bus and communication tool for evaluating said plurality of driver and vehicle performance characteristic measurements to predict current driving environment; and a vehicle control application effecting changes in vehicle performance aspects based on said evaluation for potentiating vehicle performance. [(col. 1, line 13-51 “The invention relates generally to an apparatus and method of precisely determining the actual position and attitude of

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a host vehicle operating on a select course or path, such as, a highspeed highway and/or in ... subject to operator intervention and override, to avoid collisions or to optimize prevention of injury or damage.”); (col. 15, line 55-58 “The accuracy and response time performance of the real-time GPS motor vehicle warning and control systems and methods herein disclosed may be enhanced with the use of differential GPS implementations.”)]

Regarding claim 19:

Lemelson teaches,

the sensing devices further comprise a plurality of sensing devices for generating a plurality of vehicle signals, including at least one of acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle, engine speed and brake activity. [(col. 30, line 15-24 “*The Hazard/Object State Vector also serves as an index into the total FAM. ...These output signals are likewise treated as fuzzy variables with membership classes as shown in FIG. 10. Defuzzification takes place in processing block 214 of FIG. 9 as herein above described.*”)]

Regarding claim 20:

Lemelson teaches,

the computing device further comprises a computer application for preprocessing the vehicle signals to a plurality of input signals for neural network modeling. [(FIG. 6 & FIG 7; col. 23, line 49 to col. 24, line 44“*In another embodiment, the image analyzing computer 50 is implemented as a neural computing network with networked processing elements performing*

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successive computations on input image structure as shown in FIG. 6 where signal inputs 130 are connected to multiple processing elements 134, 138 and 142 through the network connections 132, 136 and 140. The processing elements (PE's) 134, 138 and 142 map input signal vectors to the output decision layer, performing such tasks as image recognition and image parameter analysis. 56A typical neural network processing element known to those skilled in the art is shown in FIG. 7 ... Manual overrides are provided to ensure driver vehicle control if necessary.")]

Conclusion

9. The prior art made of record and (listed of form **PTO-892**) not relied upon is considered pertinent to applicant's disclosure as follows. Applicant or applicant's representative is respectfully reminded that in process of patent prosecution i.e., amending of claims in response to a rejection of claims set forth by the Examiner per Title 35 U.S.C. The patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and any objections made. Moreover, applicant or applicant's representative must clearly show how the amendments avoid or overcome such references and objections. *See 37 CFR § 1.111(c).*

Correspondence Information

10. Any inquiries concerning this communication or earlier communications from the examiner should be directed to **Michael B. Holmes** who may be reached via telephone at **(703) 308-6280**. The examiner can normally be reached Monday through Friday between

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8:00 a.m. and 5:00 p.m. eastern standard time.

If you need to send the Examiner, a facsimile transmission regarding After Final issues, please send it to **(703) 746-7238**. If you need to send an Official facsimile transmission, please send it to **(703) 746-7239**. If you would like to send a Non-Official (draft) facsimile transmission the fax is **(703) 746-7240**. If attempts to reach the examiner by telephone are unsuccessful, the **Examiner's Supervisor, Anil Khatri**, may be reached at **(703) 305-0282**.

Any response to this office action should be mailed too:

Director of Patents and Trademarks Washington, D.C. 20231. Hand-delivered responses should be delivered to the Receptionist, located on the fourth floor of **Crystal Park II, 2121 Crystal Drive Arlington, Virginia**.

Michael B. Holmes
Patent Examiner
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ANIL KHATRI
PRIMARY EXAMINER